Lichen

"Antler lichen," grows on conifer branches often found adjacent to high elevation rock outcrops.

Virginia is the only place where this concentric ring lichen has been found.

Crustose lichen on rock.

What are lichens?

When you visit a rock outcrop in Shenandoah National Park, you are sure to find lichens. Lichens are a specific group of fungi unique because of their symbiotic relationship with green algae. The algae provide carbohydrates from photosynthesis to the fungus, while the fungus provides nutrients from decomposition to the algae.

Lichens are the first colonists on exposed rock. They secrete acids that gradually break down the rock surface on which they grow, contributing to soil development. Lichens grow extremely slowly, adding only 0.1 mm to 10 mm of growth per year.

Lichen Discoveries Made During Rock Outcrop Management Project.

The Study.
In the fall of 2005, iorder to augment the park's knowledge base regarding lichens, park resource managers, scientists, and volunteers collected lichen specimens at four high elevation rock outcrops within the park.

The Discoveries.
The rock outcrop collection resulted in the identification of 95 lichen species: 43 of these species are new to the park's lichen list. Preliminary data show that Shenandoah National Park is home to up to six previously undescribed lichen species, one species new to the eastern U.S., and eight species never before collected in Virginia. The unique high elevation outcrops in the park provide small pieces of suitable habitat with a more northern clime.

Why is this important?
Lichens species are very important because they are excellent indicators of ecosystem health. Much of the mineral nutrition needed by lichens is obtained from the surrounding air and precipitation to which they are exposed. For this reason, lichens are extremely sensitive to poor air quality, especially sulfur dioxide pollution. The lichen species present in an area can inform scientists on the relative health and integrity of the ecosystem.